Recd Aug 21
Ans same day

Marquette, Michigan,
August 17th 1867.

Dr. Engelmann,
St. Louis, Missouri,

Dear Sir,

Understanding you are still "down in the swamps", among the Junci, &c., I take the liberty of enclosing you a little plant I found in the swamps on the South shore of Lake Superior, in the vicinity of Marquette. I would be much obliged for your opinion on it. It grew abundantly in Sphagnous swamps or rather marsh; and seemed to vary greatly in size, &c —

Hoping to hear from you at your leisure, I am,

Dear Sir,

Very truly Yours

Henry Gillman.

I read with pleasure your paper on the Junci, from advance sheets new ed. "Gray's Manual".

I think I have found several new things in this region this summer. —

H. G.

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Rec^d Sept 3
Ans Sept 4

63 Adams Avenue West,
Detroit, Sept. 2. 1867.

My Dear Sir,

Your very kind letter reached me when on my way to Detroit, having been unexpectedly obliged to return home. I, at once, began to lament I had not previously known your wishing for the Juncus Canadensis, var. coarctatus, as I could have procured beautiful specimens in abundance at Shot Point, South Shore Lake Superior. But most fortunately the boat on which I returned made "a stop" at the Sault de S^te Marie, & I embraced the opportunity to ransack an adjacent swampy point, and was

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rewarded in finding the desired plant. I Collected for your herb. normale about 150 Specimens, as well taken up, &c., as the circumstances permitted. I am almost positive this is the same Juncus which I collected last season on the West shore of Lake Michigan, with some others, naming it the J. alpinus. — I enclose a small Specimen of those now collected, for your opinion. I have not as yet had time to compare with the Specimens in my herbarium, though I think I am correct in my statement.

Had you not replied so promptly to my communication I would not have received your letter while in the upper country,

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wrote here,

& so, failed to procure you the plants.

I am much obliged by your very kind offer, which could not but be flattering to me. I have only to say I shall be exceedingly happy to do anything in my power for you in this direction, and beg to remain,

Very truly yours -
Henry Gillman.

Dr. G. Engelmann,
St. Louis,
Mo.

H. Gillman

Recd Sept 14
Ans Nov 7

63 Adams Avenue West,
Detroit, Sept. 12. 1867.

Dr. G. Engelmann,
St. Louis, Mo. —

My Dear Sir,

Your kind favor is before me, for which I am much obliged. I shall hand my specimens of the Juncus Canadensis, v. coarctatus to Dr Bigelow, as soon as they are properly dried, and I am very glad to be able to contribute so much to your valuable work. I think I can make out for you about 150 specimens, which, I presume, will be all you require. As to its time of maturing I have to say that, from my observations, it must be one of the earliest of the Junci — much earlier than the allied form J. C. v. longicaudatus. My earliest date of collecting it (the former) is July 23d — and then it was almost passed. I have never found it growing with Sphagnum. I herewith send, as you request, a list of the places & dates of my collecting it, and of the principal plants with which it occurs.

J. Canadensis, va. Coarctatus. — Rawley's Point, Wisconsin, West shore of Lake Michigan, Sept. 20. 1866, in sand, in swampy spots

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and along stream, with J. C. var. longicaudatus, J. Balticus, and J. nodosus, L. —— Shot Point, Michigan, South Shore of Lake Superior, July 23d 1867, In sand, edge of Sphagnous swamp, near lake shore, with J. C. var. longicaudatus, – J. nodosus, L., – J. acuminatus, Michx., – & Carex cylindrica, Schw. —— Sault Ste Marie, August 29th 1867 – in water in swampy place along river shore, muddy bottom, with J. nodosus, L., J. effusus, L., J. bufonius, L., – Bidens frondosa, L., Polygonum Hydropiper, L., & Sagittaria variabilis, Engelm. – The water from the St Mary's River washed into the low ground where it grew. – Most of my specimens which I will send you are from this last locality, but I shall send send some of all the places & dates named. –

During the past season I collected several Carices which puzzle me – & even Rev. L. Holzer, who has studied the Carex in special, thinks I have found some new ones. Would you care to examine them? If so I would forward you specimens. If not, perhaps you would kindly let me know of some one who now makes a study of the Carex, & would give me his opinion of mine. –

With best regards

Very truly yours

Henry Gillman.

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Rec'd Oct 28
Ans Nov 7

63 Adams Avenue West —

Detroit, Oct. 24. 1867.

My Dear Dr Engelmann,

I have just handed to Dr. Bigelow for your "Herbarium normale, &c." — the specimens I have collected for you of the Juncus Canadensis var. coarctatus. — He mails them, with some specimens of his own, immediately. — The specimens in package No. 1 are from "Shot Point, Lake Superior, Aug. 4. 1867" — those in two packages marked No. 2 are from "Sault de Ste Marie, Lake Superior, Aug. 29. 1867" — See enclosed labels. As I have already informed you as to the localities, — the plants found growing with them, &c., it is unnecessary to repeat.

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I shall be glad to hear that you have recd. them safely, & that they please you, *if* they *do.*— I have just returned from a trip to Boston, where I have had a delightful time— saw Gray, Agassiz, &c, &c.—

In great haste, but

Very truly yrs.

Henry Gillman.

Dr. G. Engelmann
St. Louis
Missouri.

I should be pleased to exchange Cartes-de-visites with you, & would be greatly obliged for yours—

H.G.

Recd Jan 17

63 Adams Avenue West
Detroit, January 14th
1868.

Dr. G. Engelmann

Dear Sir,

I am much obliged for your kind favor with list of plants, which duly reached me. — As to the Xyris, when in Cambridge, I showed it to Dr. Gray, & he told me he could make it only a variety of *bulbosa, Kunth.*, but confessed it troubled him. You name it *X. flexuosa var torta.* Do you mean of *Muhl. Cat.*? This Gray makes = *bulbosa, Kunth.*

Thanks for your mention of

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Mr. Olney, of which I may be glad to take advantage.—

With respect to the Sambucus Canadensis, I have to say, that, in my Yard, there is at present a tree of it which measures at base 8½ inches in circumference, and is from 5 to 6 years old at least. It is about 9 feet high, and bears blossoms & fruit abundantly.

It differs in this one respect from Gray's description:— the leaflets are not perfectly smooth; but are some-what hairy on the stems & veins at the back.—

Are you positive the _Sambucus pubens_, _Michx._, is native?—

I have never seen it away from

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settlements or old fields or clearings. —

With best respects,

Yours truly

Henry Gillman.

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Ans Rom Jan 14 1869

63 Adams Avenue West:
Detroit, Mich.
April 17. 1868.

Dr. Geo. Engelmann
St. Louis, Missouri.

My Dear Sir,

Your Herbarium normale has duly reached me through Dr. Bigelow. Accept my most grateful thanks for so valuable a gift. I shall preserve with care this important addition to my Botanical Collection, for its own sake as well as for that of its distinguished editor and donor.

I have heard with great regret your determination to leave for Europe. But I

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trust I have heard incorrectly as to its being a permanent leave. Such a loss the world of Science, this Side the Atlantic could not easily sustain.

If you are not too busy might I ask for a few of the labels of Junci which are not in the Collection, but which I have of my own. Particularly the J. Stygius would be acceptable:— I mean *your label*: I have a single Specimen.—

Again thanking you for all your kindness to me, and wishing you every success and happiness in your future plans,

I beg to remain

Very truly Yours

Henry Gillman.

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Rec'd Octo 3rd
7

5 Aspinall Terrace,
Detroit, Sept. 30. 1870.

Dr. Geo. Engelmann,
St. Louis, Mo. –

My Dear Sir,

I have several times intended writing you since your return from Europe; but I have been much from home, and my health has not been good; so that I have been obliged to neglect my correspondence for some time. I enclose you some specimens of *Wolffia Columbiana*, Karsten, which I found in blossom some weeks ago at Sandwich, Ontario, on the Detroit River. Also *Wolffia arrhiza*, L., or what I take to be such, found by me at the Bloody Run, Detroit, growing with Lemna. – I have been watching for over a year the *W. Columbiana* to get the blossoms – it has now almost driven out the *Lemna* in the pond where it flourishes, & taken possession; though

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the Lemna was in the majority a year ago. — It is now over an inch thick in some parts of the pond. —

I found at Eaton Rapids, Mich., in June, thousands of the Lemna minor L. in blossom. It is rare, I think, in this condition.

I send the Wolffia arrhiza as I collected it the other day, hoping it may reach you fresh.

With best wishes & hoping to hear from you soon -

Very truly Yours
Henry Gillman.

Please use above direction.

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Recd Oct 20
Ans Oct 29

5 Aspinall Terrace,
Detroit, Oct. 18. 1870.

Dr. George Engelmann.
St. Louis, Mo.

Dear Sir,

Yours of the 7th inst. duly reached me; but I delayed replying till I could send you some fresh Wolffia. I procured a lot, two days ago, which I have sent you, & hope it will reach you in good order, & that you may be able to make out blossom or seed. I hardly hoped this in the first lot, there were so few. They are (the flowers), I think, far from abundant. I have not been able to find any since I first noticed them — in August — and then in a large amount I could only be positive of seven flowering specimens.

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I found no seed, & think the flowers were abortive. But, I presume, I may have overlooked many. As to the second paper containing Lemna with what I took to be Wolffia arrhiza, L., I gave it no close examination or comparison, & only judged by the size & general appearance, as it was more than twice as large as that I found at Sandwich, Ont., though not anything like it in numbers, as you will at once perceive. Where can I find a good description of Wolffia? The package of Wolffia last sent you I have not delayed to examine closely; but put it up for you immediately that you might get it fresh. —

I had not seen Dr. Bigelow for a long time, till about two weeks ago. He seemed well, & is, I believe occupied with introducing two medicines, which seem to be considered of favorably.

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He was much pleased on my informing him I had at last (a few weeks ago) found Isoetes in our Detroit River. We have long looked & watched for it; but without avail, till I found it. I collected it in the river at Sandwich, & above Windsor, Ontario. It is the I. echinospora, and comes near the var. Boottii, but the interesting part is that it appears to be the European form, not hitherto known to exist here. I found very few specimens & they were only 3 inches in hight, & under. I do not think the Isoetes has been hitherto found in the region of or on the Great Lakes — or at least beyond the Niagara River.

I enclose the specimens of Lemna minor in fl. which you wished for. Many thanks for your offer of Lemnae in flower; which I shall be much pleased to receive. I was not aware the L. polyrrhiza had been found in flower in this country, as you will see by some remarks from me on the "Morphology of Lemna" in the last number of the American Entomologist & Botanist.

I shall give your message to Dr. Bigelow when next I see him.

Excuse great haste,
Very truly Yours,
Henry Gillman.

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rec. Nov 12th
ans. Nov 13

5 Aspinall Terrace,
November 9th 1870.

Dr. Geo. Engelmann.

My Dear Sir,

Yours of the 29th ultr. with enclosed Wolffia duly reached me; for which receive my thanks. Do you not think that the smaller of the Wolffia sent you by me is W. Brasiliensis? — From your description this appears to me so. Mr. C. F. Austin, to whom I sent some, thought some of the specimens W. arrhiza, L. — & you say perhaps this is not sufficiently distinguished from former species.

I enclose with this specimens of Isoetes, collected by me on the Detroit River. One is I. echinospora, the other (collected at Sandwich) I was not quite satisfied about in determining;

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but it appears a different species. —
I send them, such as they are, for your satisfaction; but as they are the only specimens I have from this region, I will have to ask you to return them to me when you are done with them, if not too much trouble.

Mr. Austin has just sent me his interesting notes on Lemna published by the Torrey Club, giving illustrations of seed, &c. —

Should you write me during the next two or three weeks please direct to Fort Gratiot, Michigan, where I expect to be for about that time, on business connected with the Sale of the Military Reservation there. I spent part of July & August there, & found much of interest.

Very truly yours
Henry Gillman.

Rec'd Nov 2?
Ans Dec 13

Fort Gratiot, Mich.,
November 2?th 1870.

Dr. Geo. Engelmann
St. Louis, Mo.

Dear Sir,

Yours of the 13th inst., enclosing Isoetes, was rec'd. by me some days ago. [illegible] [illegible] [illegible] now to state that the [illegible] of [illegible] to [illegible] & American forms. — I find [illegible] in the Sandwich plant also, but not so easily discovered, nor so numerous as in the Windsor [illegible]. The difference I consider [illegible] the spinules on the macrospores of the ~~former~~ latter, so long, slender, & occasionally forked — while on the ~~latter~~ former they approximate to the twisted, crested ridges as seen in I. lacustris. — The [illegible] of the plant in so [illegible] a locality is remarkable, particularly as you say it has been found at the Sault Ste Marie. —

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I do not think that I mentioned to you my finding Juncus Canadensis var. Coarctatus at Sulphur Springs, Sandwich, on the Detroit River — remarkably fine specimens; quite abundant. This is interesting as being in vicinity of [illegible] Eddy's Station; — also as showing how a plant may elude very careful search. For the Mr. Holzer & Dr. Pitcher were unsuccessful in finding it, though they searched both sides of the river. I find it on St Clair River also, at Fort Gratiot, & Sarnia, Ontario (opposite).
Do you know a good manual on Fungi? Where can I procure "Cooke's British Fungi"? I enclose a Callitriche which grows here, & which I take to be verna, for your opinion. — Also a Chara from Sarnia, Ont.o — I expect to be detained here now for much longer than I anticipated. — I add some Lemna minor, fertile, which I found also at Sarnia. —

In great haste, but
Very truly Yours
Henry Gillman

Recd July 1st
[illegible]

80 Elizabeth Street West,
Detroit, June 27. 1871.

Dear Dr. Engelmann,

I enclose you a few specimens of a Wolffia which I find growing in the River Rouge, a tributary of the Detroit river;- it is rather sparingly represented, among Lemna polyrrhiza, and Wolffia Columbiana. It is to me new, and I hope will arrive in such condition as to afford you the means of satisfactorily examining it. But I will say that it is so totally distinct from the Columbiana that I could pick it out from among the latter as fast as I saw it with the naked eye. It is elongated elliptical, inclining generally to be pointed, much darker green above, where it is also of a finer, closer texture, & polished and contracted or concave *even when not dry*. I have given it but a slight examination, & hasten to forward it to you for your opinion – But from my rough description, &, above all, from the specimens, I feel sure you will be able to determine it. –

Have you good descriptions of the different species of *Wolffia*? I would like to know where I I could obtain such. — –

I was able to get but a few specimens of the enclosed, but hope, if I am not obliged to leave town at once, to have an opportunity of obtaining more. As I fear I may have to leave in a few days at most, may I ask for a reply at your earliest leisure?

I enclose the few specimens in paper, and then place them in some of the Lemna & Wolffia among which they grew, hoping to preserve them in good condition.

In great haste, but
Ever truly Yours
Henry Gillman.

Dr. George Engelmann,
St. Louis
Missouri

The Wolffia is W. Brasiliensis,
but scarcely spotted

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Rec. June 18
Ans. — 19

80 Elizabeth Street West,
Detroit, July 15. 1871.

Dear Dr. Engelmann,

I owe you many thanks for your kind letter and for the Wolffia. I hardly suspected my Wolffia was the Braziliensis; but I wished for your opinion. I have since found it again in the same place. It grows quite sparingly, however.

I think I find the Juncus Greenii quite abundant here this summer. Is it not very like J. tenuis? I enclose specimen.

I enclose you a Carex which seems to me C. foenea, var. ferruginea, & pretty near if not quite what Olney makes C. tenera Dewey var. tuberculata Olny. It grows here in meadow land near

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the city. — Olney wrote me in
regard to Sartwell & Boott finding
it here, & wishing me to look
for it. I have not yet sent
it to him, as I wait to have
some others to send with it.

In haste but
Very Truly Yours,
Henry Gillman.

Dr. George Engelmann
St Louis, Missouri

Recd July 20
Ans — 29

80 Elizabeth St. West,
Detroit, July 18. 1871.

Dr. George Engelmann,
St. Louis, Mo. –
My Dear Sir,

I believe I sent you, through mistake, a wrong Carex for *Carex tenera*, Dewey, and I rectified my blunder by sending you a little package by mail yesterday of the true *C. tenera*, Dewey, *var. suberecta*, Olney.; or what I take to be such. It grows rather abundantly here; and the specimens sent you yesterday were gathered by me the day before on Belle Isle, an island in our river opposite the upper part of our city. It grows there in good condition, & quite plentifully; but is at present rather too far advanced for preserving specimens, unless the more backward culms are carefully selected, as, at best, it sheds its seed rather easily — like others of the genus. Gray gives this carex, I think, under the name of C. fœnea var ferruginea — (but I am not positive). — If so, Olney makes a mistake in quoting from the manual his synonym — (on label).

I also send you a Lemna which I found growing on Belle Ile, and fertile. It may be a form of L. trisulca, L.; but even if so, is interesting from its rarity in flowering, having been found in flower, I think, for only the first time in this country ~~in~~ ~~flower~~ a few years ago, by Mr. Booth. — It was abundantly in flower, covering the surface of the little pool, in company with L.

polyrhiza & *L. minor*, both of which, however, were largely in the minority, as you will perceive by Specimens enclosed. — It may only be a dwarf form or early state of *L. trisulca*. It would be interesting to Know whether the flowering Specimens heretofore found were of this Small depauperate-looking state or form. — To me it appears to present differences separating it from *trisulca*.

In great haste, but
Ever truly yours
Henry Gillman.

You will perceive that those plants more nearly resembling *trisulca*, are not those in flower. — I shall be anxious to hear from you.

Darwin (*the Great*) writes me that two of his Sons are about to make a Short tour through the

United States; and they will visit Detroit among other places. We must do them honor.

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Rec'd Aug 3
Ans – 9

80 Elizabeth Street West,
Detroit, July 30. 1871.

Dr. Geo. Engelmann
St. Louis, Missouri,

My Dear Sir,

I have found Lemna polyrrhiza in flower to day at the other end of the same pond (on Belle Isle, Detroit River) in which I found the flowering L. trisulca two weeks ago. It grew with L. trisulca & minor, but was greatly in the majority. All three are in flower together! I enclose specimens. — I have secured more of the trisulca (& enclose some) in hope of securing fruit; but I have not as yet had time to examine it carefully. At four o'clock this p.m., both stamens

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were expanded – in many cases. –

I have also this afternoon found on Belle Isle, rather abundant, Isoetes echinospora – or what I consider such. I enclose specimens for your opinion.

In great haste, but
Very truly Yours
Henry Gillman.

I shall try & send you a package of L. *trisulca* in oilsilk, so that you may get them fresh.

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Recd Aug 17
Ans — 22

80 Elizabeth Street West, -
Detroit, Aug 14. 1871 -

Dr. Geo. Engelmann
St. Louis, Mo. -
Dear Sir,

Yours of the 9th inst. is before me; — since writing which I presume you have received from me a larger package of both *Lemna trisulca* & *L. polyrrhiza*, among which you will find fruiting specimens. — I hope it proved satisfactory; but, as I am still in town, I procured some more yesterday, which I mail to you to day — both *L. polyrrhiza* & *trisulca*. — I shall also try & select some fertile specimens, & placing them in alcohol, as you suggest, forward them to you. I am expecting to be called from town at any moment, and am so busy I really have not had time to give a careful examination to the plants; but this you will be best able to do. My first package, sent without manuscript, as "Plants only", I mailed you on the 7th. I mail another package of about same size to-day.

I did not see the notice in regard to Mr. Leggitt's finding polyrrhiza in flower, as I do not receive the Bullet. Torrey Club. – I am glad you will be able to add to the information of these rarely flowering plants, through my specimens.

You did not say what you make the Isoetes I sent you. But, I am pretty sure

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it is *echinospora*. It grows quite abundantly in the river, off Belle Ile. — I found some the latter part of July with the macrospores ripe. Is not this very early?

Very truly Yours
Henry Gillman.

Please let me hear from you, when you find time. I will try & carry out any suggestions you make in regard to Lemnae, if in my power, & if in town. Would it not be well to select fertile fronds & keep them in water, to secure ripe seed?
H. G.

Recd Aug 28
Ans Sept 7

80 Elizabeth St. West,
Detroit, Aug. 25. 1871.

Dr. Geo. Engelmann,
St. Louis, Missouri,

Dear Sir,

Yours of the 22d inst. is before me. I regret much your not having better success with the Lemnae, and that I did not know it sooner.

I send you today by mail a package containing Lemna polyrhiza & L. trisulca, separately done up in oil silk; - also selected fertile specimens of the three species L. polyrhiza, trisulca, & minor, put up together in alcohol, in small vial, enclosed in cork.

I also send you, enclosed in this letter, selected fertile specimens of L. polyrhiza. I regret not

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having a good microscope; — but I think the fruit is very scarce; or perhaps on fruiting the plants mostly fall to the bottom, and so are not collected. I have seen the fruit of L. trisulca & minor. But of L. polyrrhiza I found no perfect fruit; — only just forming at most. — I hoped your better opportunities for studying them would have revealed more. You may perhaps be able to do more with the material now sent you.

Thanks for your printed letter, which is most interesting. Mr. Austin sent me his remarks.

At 4 o'clock p.m., on several occasions, I have particularly observed the flowers, and found both stamens protruding. I could not reach the grounds at an earlier hour; & so can not be positive as the posterior stamen expanding at a later hour than the anthers. In no case, though I have examined a large number of the flowers of L. polyrrhiza, for that purpose, have I seen the pistil protruding.

I enclose you other specimens of Isoetes echinospora, or what I make such, collected at a later date at Belle Isle, Detroit River.—

I am on the eve of leaving for Lake Superior, to be absent a few weeks there. I would like to hear from you while there, to know further as to the Lemnae. My direction for two weeks will be, Eagle River, Lake Superior, Michigan.

Excuse my great haste

Very truly Yours

Henry Gillman.

On my return to Detroit, if my stay permits, I shall make another effort to collect the Lemnae, should the specimens now sent you not prove satisfactory. So write me.

I shall look out for Isoetes on Lake Superior again, though I never have been successful in finding ~~it there~~ it there.

1852 Aug 7

Recd. Sept 23
ans June 17 1872

80 Elizabeth St. West,
Detroit, Sept. 20th
1871.

Dr. George Engelmann,
Dear Sir,

I returned only this morning from Lake Superior, and expect (alas!) to leave tomorrow for either Lake Huron or Lake Michigan, or both. I had hoped for a stay of a few days in Detroit, for several reasons, one in especial being the wish to visit Belle Isle once more, in hope of finding fruiting Lemna polyrrhiza. But I fear this is out of the question now. And on my return — an interval of probably three or four weeks will have ensued, so that it will be rather late to hope for much.

I found your interesting letter of 7th inst. awaiting me. I think from what I saw of the fertile fronds I kept in water, that the frond gradually decays, setting free or destroying the air cavities, when the fruit falls to the bottom. I think the majority of the fruit, though, is abortive. — I do not confuse this sinking of the fruiting fronds, which is through decay, with the sinking of the small, hibernating fronds — a fact I have been well acquainted with, and have experimented on some time ago. —

By a strange coincidence I met Dr. Bigelow in the street this afternoon, though I had not met him for a long time previously. I gave him your message, & I think he will write to you. He has a small farm outside the city, where he now resides. He told me he is at present experimenting on hybridizing the grape. — If you have any to spare, I, too, would be glad of some of the young shoots of _Opuntia Bigelowii_. This past Spring I planted the seed of what they called in Boston the _South_ American prickly pear, & which I procured in that city two winters ago. It had lain forgotten till then. In about a month it germinated, coming up in a pot, & also in the garden. I have now quite a nice lot of little plants, & enclose one for your opinion. What do you make it? — The strange part is that they still keep germinating (the seeds) & coming up — after having been planted more than _four months ago_. — The fruit from which I took the seed was oval oblong, of a rosy-orange color, and insipid flavor. —

I visited the north shore of Lake Superior, as well as the Southern Shore. Saw the great Silver mining land, Thunder Cape, Pie I.d & Silver Islet, Prince Arthur's Landing &c., &c. — Botanically I did a little. Found *Aspidium* fragrans, & *Lonchitis*; the latter on the South Shore of the Lake — its only known habitat, I believe; where I saw it for the first time in 1865. — It grows on the top of the high bluffs near Eagle River, in beautiful, shady maple groves — only there — the dainty beautiful creature. — Other *finds* I will speak of when I find leisure.

Yours very truly
Henry Gillman.

I enclose another lot of my first found specimens of *L.* polyrrhiza. Have no time to look them over. H.G.

AL GARDEN
OE ENGELMANN PAPERS

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MISSOURI
BOTANICAL
GARDEN

Recd July 5th
Ans — 16

80 Elizabeth Street West,
Detroit, July 3. 1872.

Dear Dr. Engelmann,

I received yours of the 17th ulto. (forwarded) to Tawas Point, Lake Huron, where I was staying. I have just returned to Detroit, &, in a brief leisure moment, send you the package of Abies balsamea. None grew at Tawas Point; & I sent miles in search of it in vain. The specimens sent I procured from Alpena, Mich. (Lake Huron). I regret not having the cones. The branches tied together are from top of tree; the others are the bottom & intermediate branches. When next I encounter it you shall have better specimens. Singular to say, I never before specially observed the tree, though meeting it thousands of times; & actually had no specimens in my herbarium. I once said to Father Holzer, "How is it we so neglect the trees?" He replied — "They are too far above our heads for us to see them!" — I have not met A. Fraseri, to my knowledge; but may have overlooked it. I shall pay closer attention in future. — I shall take the first opportunity to watch for Spirodela. The pond dried up, last fall, during the great drouth, & so destroyed my prospect for fruit; as I found on my return from Lake Michigan.

Now as to the Opuntia. I am glad the Specimens appear to be new, though you Speak of but one growing, & that Slowly. I enclose you two others in the package now Sent, which may give you a better idea of the character. The history of it is this:— I purchased in a fruit shop in Boston, Mass^{tts}., in December, 1869, two Specimens of fruit sold as the South American prickly Pear. The fruit of a tawny or dull orange color, was about 3 inches in length, by about half the breadth; perfectly smooth, with raised protuberances about half an inch apart covering the surface, *but no prickles*; the rind thickish; the pulp sweet but insipid, with a large number of circular, flat seeds about $\frac{3}{16}$ of an inch in diameter, & of this appearance . I saved a quantity of these; but they lay neglected in my trunk till May 1871, when I sowed them, a portion in a pot in the house, the remainder in a bank in the garden. To my astonishment, in about a month, an abundance came up in both places, & the seed continued to germinate for several months after, as already related. The largest of my plants are now 6 inches high; but otherwise do not differ materially from the accompanying specimens. They are strictly erect, showing no inclination to be prostrate. One plant had 4 instead of 2 Cotyledons, & 2 distinct axes of growth; but during my absence from home this was unfortunately lost. I shall be glad to know what you make of them:

Many thanks for your promise of *O. Bigelovii*, which I shall be glad to receive. I shall take pleasure in sending you the Aspidium, &c. my first leisure; but I may have to leave town again immediately & hasten to send you these specimens.— (

You can always direct to me by my Detroit Direction, as, if I leave, my letters will be forwarded, & I shall be glad to hear from you.

Yours truly
Henry Gillman.

Dr. George Engelmann
St. Louis
Missouri

I add specimens of A. nigra & Pinus Banksiana. The latter of unusually large trees. H.G.

M.S.S. ... GARDEN
GEORGE ENGELMANN PAPERS

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Rec'd July 26
Ans July 26

Fort Gratiot, Michigan,
July 23. 1872.

Dear Dr. Engelmann: –

Yours of 16th inst. is before me. – I am glad you are satisfied as to the Opuntia.

With respect to the Pinus Banksiana, I have to say that the female flowers & fruit being terminal is far from exceptional. Both the lateral & terminal forms are common at Tawas. The specimens collected by me at Tawas Point, Michigan (Lake Huron), were selected from abundant material, presenting exactly the same features. This would seem to require a correction of your classification of it, – placing it, perhaps, in an intermediate group – between the two groups you have already erected. Do you not think the vigor of the branch has something to do with the position of the flowers, & with their being male or female? When next I meet it you shall have more specimens.

The Abies balsamea was procured for me, not collected by myself — & was only sent you as being better than nothing. I shall send good specimens of — Cones, &c., when next I meet it.

In my short stay at Detroit I visited Belle Isle, but found that the excessive drouth of the last month or so had perfectly dried up the pond where Spirodela blossomed so freely last season.

The enclosed — a branch of what I take to be Cycloloma platyphyllum, I find growing here — at Fort Gratiot. But why so far east? Let me know what you make it.

You can direct to me here for the next two or three weeks. But when you send the Opuntia Bigelovii, send by my Detroit direction, ~~as my~~ where they will be taken care of. Whenever in doubt you can use my Detroit direction, as my letters will be duly forwarded, if not at home.

Yours truly
Henry Gillman.

Dr. George Engelmann
St. Louis
Missouri.

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Rec.d Nov 4th
11

Aster Diplopappus linariifolius
Hedeoma pulegioides
Coreopsis trichosperma

80 - Elizabeth Street West,
Detroit, Oct. 31. 1872.

My Dear Dr. Engelmann;-

Yours of the 26th inst. duly reached me; & the following morning I received the little box containing the Opuntiae, for which I am greatly obliged. Dr. Bigelow has not yet called for his, & as you said you had written to him I did not attempt to communicate with him. I shall keep them safely for him.—

I regret that all the localities I have visited since I wrote you last were destitute of Abies balsamea. You should otherwise have received the promised specimens, which I hope to be able to procure another season— probably early next year.— Thanks for your determination of the Chenopodium Botrys. I have since found it common at Port Huron, & along the Railway at St. Joseph, Mich.— — Can you throw light on the enclosed three specimens? The Bidens & Aster I can not satisfy myself about; though they are so marked. The Bidens resembles frondosa, & grew in wet ground abundantly, but with very showy flowers! in this respect unlike that species. The Aster is a beautiful little plant, with blue flowers, & hard rigid leaves, all narrow, as seen in dried specimen. The third little plant I collected in low, wet prairie land. All are from South Chicago, Illinois. The aster grew in open Copses, on borders of prairie. They were collected early in October. —

Very truly Yours
Henry Gilleman.

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MISSOURI BOTANICAL GARDEN

Rec Dec 20th

80 Elizabeth Street West,
Detroit, Dec. 16. 1872.

My Dear Dr. Engelmann,

I owe you many thanks for your kind determination of the plants; also for the Lemna sent me, & which I had not previously received from you.

Dr. Bigelow called during my absence from home, & got the Opuntia, which I had potted for him. Mine do nicely, particularly the *O. pes-corvi*. — Do the seedlings *Opuntia ficus-Indica*, which I sent you, thrive? If not, or if you wish others, let me know, & I will send you some nice ones, as I have quite a lot. — From a little seed which I found I had, I satisfactorily identified the Coreopsis from South Chicago, as *trichosperma*. Gray states that the Species of this group hybridize with Bidens. The *Hedeoma pulegioides*, of which I sent you a little piece, differs from the description, & the usual form, in being prostrate; in the flowers in each whorl being numerous (12 – 30); & in the plant being smooth – not hairy. The corolla much exceeds the Calyx. I find the plant always smooth on the Great Lakes. These specimens grew on wet prairie.

I have just returned from Holland, on Lake Michigan, but, to my regret, no Balsam grew in the neighborhood, nor for scores of miles in any direction. You may be sure I shall collect it for you, the first opportunity. I collected there some seeds of *Corispermum hyssopifolium*, & thinking you might like some for your Botanical Garden, enclose a few. The plant is spreading fast along the sandy shores of Lake Michigan, & along the Railway at St. Joseph, as well as at Holland (Black Lake), on the East Shore of Lake Michigan. I collected it on the West Shore of the lake, for the first time, at Rawley's Pt, in 1866. It is a rapid traveller. It always grows in pure sand.

I found numerous small trees of Juniperus Virginiana at St. Joseph, Mich.; also at Holland, where, as well as at South Haven (all on East Shore of Lake Michigan) I found large stumps & prostrate trunks of a large size & great age; showing that this tree once abounded on the upper lakes. A large tree of this species is now never seen there.

Very truly Yours
Henry Gillman.

Dr. George Engelmann
St. Louis
Missouri.

Recd May 22
Ans same day

On Board Steamer "Meteor",
Lake Superior, May 15. 1873.

Dear Dr Engelmann,

I have found at Point aux Pins, Lake Superior, some interesting specimens of Pinus Banksiana, of which I shall send you, with this, a package containing a variety of examples. In hundreds of instances which I have examined, I find the female flrs. apical as well as lateral, such as I now send you. In my opinion the fruit takes a long time to come to perfection. I commonly find cones of one to two years old completely closed, compact & hard, & some apparently not quite developed. It is only those of three or more years, generally, which are open, showing the seed, &c. — Their tenacity in adhering to the tree is remarkable. It is a frequent occur—

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to find old cones still adhering to the main stem or trunk of the tree — grown into it, partly, and of how many years old not easy to say. They are often found so at the *base of a branch*. I call your attention to these points particularly, as I wish to have you satisfied as to their frequency; & also with reference to the specimens I sent you, last year, from Lake Huron. — Here one in twenty has the fert. only apical; the rest have it both apical & lateral, or only lateral; as the specimens I send.*

You will notice the feebleness of the branches bearing male flowers, & the vigor invariably displayed by the ♀ branches. This is very marked at Pte aux Pins; the old trees being given to producing on their depauperate branchlets the ♂ fls.; while the young trees, producing vigorous branches, have rarely any but ♀ fls. But this is only confirmatory of a well=known law. — I would like to hear from you on this sub-

-ject. Use my Detroit direction:—

80 Elizabeth Street West.

I expect to spend about two weeks in Lake Superior, a hurried trip, on business, & shall visit Isle Royale. I wish my stay were longer; but I shall probably soon return. We have encountered, so far, much ice in the St. Clair River, Lake Huron & Lake Superior, & there is some doubt whether we can make the different ports. If we can get into Marquette, I shall mail to you there.—

Whenever I encounter the Balsam (*Abies balsamea*), I shall forward you a supply of that also.

I shall probably be in Detroit about the 22d. inst.— Excuse my pencil, as, under the circumstances it is more convenient than ink.

Very truly Yours

Henry Gillman.

Dr. G. Engelmann
St. Louis — Mo.—

(Turn over)

* I am of opinion that later in the season, when the trees are in full flower, the ♀ fls. will be found more frequently apical than those examples at Point aux Pins would seem to show.

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MISSOURI BOTANICAL GARDEN

Rec^d June 6th
Ans — 8

80 Elizabeth Street West; —
Detroit, June 4. 1873.

Dear Dr. Engelmann,

Many thanks for your kind favors of 22d. & 26th. ulto. which I have just recd on my return from Lake Superior.

I have, following your suggestion, cut open some cones of *Pinus Banksiana* & find the closed ones sterile in many — *not all* cases. I, indeed, had done this already, but not sufficiently to settle the question. Neither do I think that this even answers all the cases included in my observations. I will look into this further when opportunity is afforded. —

I send with this a package of *Abies balsamea* — Obtained at Houghton, Lake Superior (Michigan). — I found no cones *on* the trees, though

I examined hundreds of specimens. They must fall when ripe. – Some of the trees at Marquette & at Houghton are of a remarkable size, over 100 feet in height; & tapering to a point like a church-spire, as they attain their full growth, as usual. You will find the blossoming specimens tied together; & the specimens from the bottom of the tree unfastened. The cones do not answer Gray's description, nor what my memory suggests; yet I collected them under the trees of this species, with no other coniferous trees near, & examined a large number of them, to be sure – and cannot see how there can be any doubting them the cones of this species. – All cones found underneath this species were of this description. – Should these specimens not prove sufficient for your requirements, I shall forward you others, as I have opportunity, –

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showing cones in different stages, &c., &c.— Those forwarded are the best I could find at present.

Yours truly

Henry Gillman.

I visited "*Isle Royale*";— but had very little time to examine the wonders of this remarkable field. The remains of the works of the ancient miners (probably "Mound builders") here, are almost incredible from their great extent, &c. I found antlers of the Caribou, very old, & gnawed by rodents. It has been long extinct there. I am writing a brief account of the recent discoveries there. I hope to be able to visit the island again this Summer.— The ancient mining must have ceased there 700 to 800 years ago. There is no difference observable in the adjacent forest & that growing *on* the sides of the pits & *in* the mines, & covering the tumuli formed of the debris taken out of the Copper veins by this race of men.

It appears to me to open a new view of the ancient mines. So far, no human bones have been found; but I hope that the exploration of the ensuing summer may add this wished-for testimony as to the race.

Excuse haste

H.G.

Dr. George Engelmann
St. Louis
Missouri.

Rec June 13
Ans July 7

80 Elizabeth Street West; —
Detroit, June 11. 1873.

Dr. Geo. Engelmann,
St. Louis, Missouri,

My Dear Sir,

Yours of 8th inst. is just rec^{d}.— I was obliged to collect those specimens of *Abies balsamea* in something of a hurry; yet how the *A. alba* escaped my observation I cannot see; though so it must have been. The cones certainly (as you know I mentioned) did not seem to me what I remembered as belonging to *balsamea*. I have noticed the axils of cones which had shed their scales remaining permanent on the trees of this species. This was on the upper rigid branches, & the axils were erect.— The specimens sent I felt would hardly prove satisfactory, but were the best I could find. I found only the male flowers, singular to say. I shall probably soon have better opportunities for procuring specimens, & shall take pains to get you what you want. At Marquette, where I had more time, I saw hundreds of those trees without flo. -

As to the ancient works at Isle Royale, Lake Superior, careful examinations have been made. I am aware, though, how easy it is to fall into error in such matters. I am writing a brief sketch of the discoveries, which will be printed in Appleton's or some other Journal, & send you herewith a few extracts from it:- * * * *

"I cannot but conclude that since the last work was done in those pits, the original forest has disappeared, having been succeeded by the oldest of our present timber, which is now in process of supplanting by what is known as our 'second growth.'" -* * * At Isle Royale the present forest covers equally the excavations & the adjoining land; no difference can be observed in the growth. Trees from two to four feet in diam. are now growing in the pits, on their sides, and on the tumuli formed of the excavated *débris* which surround them. In one case the partially decayed stump of a red oak (probably *Quercus coccinea* L.) was found on the tumulus at the edge of a pit. This tree had not been blown down, but had grown & decayed where the stump stood. A large proportion of the rotted wood surrounded it; only the red interior portion of the stump remaining sound. A careful enumeration of the annual rings composing this red undecayed centre of the the tree gave as the result the number of 384. If to this be added 200 rings, as representing the decayed outer portion of the stump, and not considered an overestimate, we have 584 years as the period of its growth. To this will have to be added the number of years which a tree with the durability of the wood of this species takes to reach the stage of decay here exhibited; & possibly some years may also be allowed for the time which may have elapsed before it commenced growing on its peculiar site. So that the placing this period at from 700 to 800 years, as already given, may not be far from the truth. On removing the stump, the *debris* underlying it was found to consist of the usual fragments of copper-bearing rock, thrown out from the adjoining pit, with which were intermingled a large number of stone hammers, some perfect, others fractured from use, &, more interesting still, a knife made of copper. Pine trees (*Pinus Strobus* Wang.) of the present forest, in which 380 annual rings have been counted, have frequently been cut on the tumuli."

I must ask your pardon for the length of this extract; but the interest you manifested, must be my apology.

I had no Botany with me when on Lake Superior, & was so pushed for time, sent these specimens on before examining the cones, as I wished you to have the specimens without further delay.

Yours truly
Henry Gillman.

P. S.

I have not noticed the cones in our cultivated A. balsamea around Detroit. I have not found them in fruit. Of course, it grows here only in cultivation. In our severe winter of 1871, which destroyed so many of the Coniferae, the A. balsameae were the most numerous victims with us. The severe cold, succeeding long droughts of previous years which had undermined the vigor of the tree, was doubtless the cause of the injury, as Prof. Shaler has supposed. The trees were generally killed at or towards the top, + remained alive below, often for one-half the height. Frequently they were entirely destroyed. I have seen in the summer of 1868, in the forests on the north shore of Lake Superior (in N. E. Minnesota) large groves of this species presenting the appearance here described. They generally grew on high land, as the slopes of hills, + near where water courses had run dry, thus apparently substantiating the opinion above expressed as to the cause of their destruction & also proving that this deterioration is not consequent on cultivation. Do you think the Coniferae — (the older vegetation) — are dying out?

I will make examination again of Detroit Specimens, & may find cones.

I have not seen (Dr. Bigelow for a long time. He lives outside of Detroit, & is not easily reached.

H. G.

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Rec June 30^5
Ans July 6

L'Anse, Michigan (Lake Superior)
June 26. 1873.

Dear Dr. Engelmann,

I have at last obtained cones of *Abies balsamea* for you, and hasten to forward them. I hope they will prove what you want. I found but few of the mature, last year's cones, as the scales fall off very easily, & I fear, even of those I send you, few will remain perfect till they arrive. But you will find an abundance of this year's cones.– They are taken from mature trees from fifty to 70 ft. high, cut down for the purpose. You will not fail to observe the scales are velvety even in mature cones, a point I have not seen noticed heretofore. They do not agree in some points with the description in Gray, particularly in the size of the cones, which I find are much smaller; other points you will observe.

I forward you the package in to-day's mail, and hope it will arrive safely.

I expect to leave tomorrow on my way home, stopping a day or two in Wisconsin. When you write please use my Detroit direction:-

80 Elizabeth Street West —

There are beautiful specimens of the tree here, very perfect in shape, & of large size. Let me know as soon as possible

If these specimens now sent
answer every purpose.
In great haste, but
Very truly Yours
Henry Gillman, Jr.

Dr. Geo. Engelmann
St. Louis,
Missouri

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Rec July 12
Ans Sept 9

Gillman

(80 Elizabeth Street West)
Detroit, July 9. 1873.

Dr. George Engelmann,
St. Louis, Mo. –

Dear Sir,

Yours of the 6th inst., acknowledging receipt of Abies balsamea, arrived this morning; and the afternoon's mail brought me your interesting publication on the Yucca; for which accept my best thanks. I shall have the duplicate copy conveyed to Dr. Bigelow at once.

I am much delighted to know the specimens of Abies proved satisfactory. As to the bracts, it appears to me that, in general, in the young cone, ~~they~~ ~~are~~ the point is exsert and reflexed; but with the growth of the scale the point becomes erect & even appressed, & finally enclosed, or partly withers away. However, some are erect & even

so

appressed from the first. Others are enclosed. They vary:

I noticed the peculiarities of the leaves which you mention. The few sterile branchlets, taken from the lowest branches on the trees, were sent to you by me with this object.

I did not neglect to make certain measurements (though not all you mention) of the trees; though I was greatly pressed for time, as a very heavy storm came up suddenly, & my two Indians who felled the trees were anxious to return. Of three trees cut, the largest was 70 feet high; at 3 feet from base it measured one (1) foot in diameter; the annual rings numbered 130; the branches began at 35 feet from the base. (In old trees I find this last feature quite common; trees rarely continuing to have branches at or toward the base as they attain age). - Of the other trees one was very nearly of the same size as this, &

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the third was about 50 feet in height. Cones & ♂ fls appear to grow only at or toward the top of tree; though ♂ fls. grow farther down than ♀; and I have seen in young trees the ♂ fls. on even the lowest branches. This last was in trees in which no ♀ fls. were to be seen; of which I sent you specimens from "Houghton in May last.— I take these remarks from my notes made at the times.—

I am much obliged for your suggestions, & shall avail myself of them in making tree measurements, as opportunity offers. I frequently find interesting studies in this field. I often have to uncover old survey marks, cut in "blazed" trees. A few days ago an interesting example was seen by me at Rawley's Point, Wisconsin (on Lake Michigan). The survey had been made 40 years ago, and one of the "bearing trees", a Hemlock, only remained, & this was much decayed; about six feet of the stump remaining. It was a foot in diameter; the "blaze"=scar was perceptible, & on cutting away a thick shell of timber (about 2½ inches thick, 3 ft. long, & 9 inches wide,) which came away entire, easily separating from the remainder of the tree, we found, underneath, the old blaze with the letters B T (Bearing Tree) cut clearly & sharply as ever on what was then (40 years ago) the circumference of the tree. The "shell" contained from twenty five & 30 annual rings.—

Did I mention my discoveries of platycnemic men in the mounds along the Detroit River, & St. Clair River, & at foot of Lake Huron? I have for some years made some interesting researches in this direction. The tibiae here are the flattest ever known (see my notes in Am. Naturalist of last year),* & show the transverse to be .400 & .420 of the fore & aft diameter in two extreme cases, & frequently .480 & .530, &c. — The extreme case mentioned by Broca from Cro=Magnon, France is, if I remember correctly, .700.—

Yours truly
Henry Gillman.

* See also 4th Annual Report of Peabody Museum of Archl. and Ethnology.

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Rec April 29
Ans May 20

80 Elizabeth Street West,
Detroit, April 25. 1874.

Dear Dr. Engelmann:

Your interesting letter of 11th ulto, duly reached me; but I have been prevented replying till now.

In regard to the Abies Canadensis (I presume the P. Canadensis is a slip of your pen), I think you will find that my measurements of the 2 species (sent you) ~~for~~ make the inner rings broader than the outer, instead of the reverse, as you mention. — I intend taking a larger number of observations in this field soon, of which I shall send you the result in due time. — I lately observed a large number of Thuja occidentalis in which the outer rings were the broadest, thus confirming my observations of the large trees on Lake Superior. I found,

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however, many instances in which the opposite state was exhibited. All these trees were rather middle aged, about 8 or 9 inches in diameter; & as the majority of the rings were broad, were therefore not so old as my Lake Superior Specimens. I noticed that frequently a band of very narrow rings occurred in the midst of broad ones, at about 3 inches or so from the centre of the tree. I regret time was not allowed me to make the usual countings and measurements of the rings.

I should be happy to do anything which lies in my power to aid you in working up Juniperus.

I find the following in my notes; —

1. *Juniperus* ***communis*** L. — Grand Haven, Michigan (*L. Michigan*), April 12. 1871, Flowers; & fruit (of last year). — White-fish Bay, Wisconsin, (Lake Michigan,) May, 1866.

2. *J. Virginiana L.* — Grand Haven, Mich^n.; (Lake Michigan) April 12. 1871; In flower. Small tree 7 inches in diameter, & a number of *very small* trees. 2 old trunks lay on the ground which measured at their tops, where the branches began 1 ft. 2 in. in diameter, the remainder of the trunks having disappeared. A part of one of these is now in my possession, but its knottiness & the closeness of the rings have baffled my getting any satisfactory counting of them. — S^t. Joseph, Mich^n.; October 7. 1872; Fruit; a large number of good=sized trees. (See specimen enclosed). Black Lake, Michigan (L. Michigan), November 24. 1872. Small trees (about 7 inches in diameter); a few stumps standing of large trees. — About 20 years ago this tree was quite abundant along the shores of Lake Michigan, but a *large tree* is never seen at present. They have been exterminated (except those of small size 7 to 8 inches or less in diameter).

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3. J. Sabina L. var. procumbens Pursh. – White=fish Bay, Wisconsin, (Lake Michigan) May, 1866. – Isle Royale, Michigan (Lake Superior) Aug. 14. 1873.

I presume I have frequently encountered those species mentioned, at other times & places; but from their very abundance in the Lake Region have not taken special interest in them.

The enclosed specimen of J. Virginiana will I hope arrive in good condition. —

Have you ever made any investigation in regard to the perforated humerus of the Mound=builders? I find it occurs along the Detroit & Rouge Rivers, as well as platycnemic tibiae. Any information in regard to those peculiarities, particularly the former, will be most acceptable.

Very truly Yours

Henry Gillman.

Dr. G. Engelmann
St. Louis, Mo. –

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Rec May 20
Ans same day

80 Elizabeth Street West,
Detroit, 16th May 1874.

Dear Dr. Engelmann,

I write, in some haste, to ask you whether you are acquainted with the discoveries made, some years ago, at two Mounds at New Madrid, Missº, by Prof. Swallow; and whether you know anything in regard to the authenticity & value archaeologically of the collection he offers for sale, the result of the exploration of the mounds above mentioned. Any information you can afford I shall be much obliged for at your earliest leisure. For some reason, Prof. Swallow appears not to wish the fact of his offering this collection for sale generally known. You will please, therefore, act accordingly.

My relative Mr. Winthrop, just before leaving for a visit to Europe, wrote me, anxious that I should visit the collection to ascertain its worth, &c., with a view to its purchase, if I considered it desirable. I shall probably visit Columbia for this purpose at an early day. I have thought you may be able to give me some information on the subject, & therefore write you, hoping to hear before I leave.

I presume you received my letter written you about two weeks ago, giving some notes on the Juniper and enclosing specimen.

The season here is un-

-usually late, & though we had a few warm, summer-like days, we are, again, plunged back into cool weather to-day.

I hope I shall soon be able to do something for you in Juniperus.

Yours very truly
Henry Gillman.

Dr. George Engelmann,
St. Louis,
Missouri -

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Rec Sept 29
Ans same day

L.L.

Detour, Michigan,
Sept. 21. 1875.

Dear Dr. Engelmann -

I enclose you a few specimens of an interesting little plant which I found at Point Detour (Lake Huron); & which I have ventured to name & describe as Lycopodium delicatulum, it seeming to be a new species. I enclose description giving details.

Selaginella selaginoides

I also send you specimens of Callitriche which I suppose you will call Autumnalis, L. - It is a submersed species, & also from Pt. Detour.

Would you like more specimens of Juniperus communis var. alpina and J. Sabina, var. procumbens, with ripe fruit? I can get plenty here.

Hoping to hear soon,

Yours very truly
Henry Gillman.

Direct to me to
80 Elizabeth Street West
Detroit, Michigan

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Rec'd Jun 26
ans. same day

Alpena, Michigan,
June 22. 1876.

Dear Dr Engelmann -

I enclose you 2 specimens of what may be Primula farinosa! Mistassinica, Michx., with yellow eye & farina=covered leaves, &c. The petals are cleft. How is this distinguished from P. farinosa? I am not satisfied. - It was past flowering when collected at Sturgeon Point, Lake Huron, June 18th by me. I find Juniperus Sabina var. procumbens, Pursh, at Sturgeon Pt June 18th 76, which bears only female blossoms - no male on entire Point, for years apparently. I counted at least 4 years abortive galls ♀ fls. & this year's coming. (No berry to be seen.) - These often become proliferous putting out leaves & stems from centre. The old stems had the same eccentricity which I found elsewhere. The rings wider beneath. It was sandy soil. I enclose a little piece showing fls. - I am satisfied of J. Communis producing fruit for 4 to 5 years in succession if not oftener. The shrubs here bore the ♂ & ♀ fls. on separate branches generally; the ♂ appearing somewhat the older, but not any more attenuated, though of a darker green than the ♀ shoots. When ♂ + ♀ fls. are borne on same branch, they are generally if not always on separate branchlets. I speak of observations at the place mentioned. Are you aware of these facts? — You can address to me at this place till about the 1st of next month. Let me hear from you soon, therefore. Otherwise use my Detroit direction, 80 Elizabeth St. West. — Has Prim. farinosa cleft petals? I have collected it on L. Superior with such — or what I took for P. farinosa.

Very truly Yours

Henry Gillman.

Do you know the var. of Pinus Strobus known as Cork Pine? The wood is much finer, lighter, less resinous, + of a yellow color. It is immediately recognized by lumber men + greatly prized. The sap wood much less. The cone is said to be smaller; but this I do not find to be so. — H.G.

Dr. Geo. Engelmann
St. Louis, Missouri.

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Recd July 11th Thunder Bay Island,
Alpena, Mich.,

region some little attention, finding them quite interesting. — I am therefore much obliged for your valuable papers,

+ shall not fail to make use of

I sent you the *Primula*, as just such specimens were pronounced by Boott to be *Mistassinica*, & I had my doubts.

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I do not know the distinguishing characters between that & *farinosa*. Do you? I have never collected Mistassinica, to *my satisfaction*, on the Lakes. It all appeared to me *farinosa*, & is all, more or less, covered with white mealiness.

The Variety of the *Pinus Strobus* known as Cork pine, I can only say is known to occur frequently in the Lower peninsula of Michigan. I have seen no mention of it in any work, & this summer thought I would investigate, & procured specimens of wood, leaf, & cone. I find no decisive points in the latter, but the *wood* is decidedly yellower than in *P. Strobus*. It is much lighter, coarser grained, less resinous, has less sap-wood by more than half, while the bark appears to be in general thicker & more ridgy. It is said to be less branchy at top, & a *cleaner-growing* tree, while the cones are said to be smaller & more closed.

These latter points I have not verified; but I certainly consider it worthy of recognition as a variety. It is highly prized for lumber, ranking far beyond the White pine, & floats more lightly in water. —

As my movements are rather undecided at present, should you write use my Detroit direction = 80 Elizabeth St. West. — Did I tell you of my discov of 2 specimens of Aplectrum (in April, at Detroit) with coral=like root, like that of Corallorhiza, immediately below the usual corm or bulb? — How significant!

I find here Houstonia angustifolia Michx.; but leaf is not narrowly linear. See Specimen. Also Corallorhiza Macraei, Gray. Has this been proved distinct from C. Striata, Lindl.?

Hoping to hear from you, I am

Very truly Yours

Henry Gillman.

Dr. Geo. Engelmann

St Louis, Missouri.

I see you make no mention of Q. coccinea, var. ambigua. This, "the Oak of L. Superior", I collected last year.

Rec Oct 26
Ans Dec 21

Lophanthus [illegible]
[illegible]

Superior City, Wisconsin,
Lake Superior,
Aug. 30th 1876.

My Dear Dr. Engelmann,

What do you make the enclosed Juncus? I find it growing on edges of ponds here. — Also the Labiatae?

Did you receive mine of July 4, enclosing Juniperus galls? The Houstonia, also mentioned & enclosed, a closer inspection showed me to be H. purpurea var. ciliolata.

I am collecting for you a few monstrosities, galls, &c. —

Have you ever observed that Gray's description of the fruit of Rosa blanda, Ait., is incorrect? Extensive observations over wide area in the Lake region shows me that it is in no sense globose. It is, in fact, elongated elliptical — Often so "long drawn out" as to be twice as long as broad. I have been for some time exercised over our Lake roses, & at one time began to think we had an over-

-looked species. I find forms sometimes which seem to unite *R. blanda* & *lucida*. But this character of the fruit, above mentioned, is a marked distinction, so much so that it is wonderful it has not been placed on record. - I collected specimens showing this at Copper Harbor, in 1871, & had before that noticed the peculiarity of form. Here are two measurements of not unusual dimensions: 1st {length. breadth. 0.80 × 0.30; 2d {length. breadth. 0.750 × 0.375.
In *lucida* the fruit is generally as broad as, or broader than long.

I am sorry to say that owing to the smallness of the appropriations made by Congress for the services of this Light-House district, I shall be suspended on and after the 30th September next, for want of funds to pay my salary.

I shall, therefore, in this sense, be like Othello - "my occupation gone;" and I am anxiously looking around for something to do; which is not very easy work such times as these are. I have, for some little time past been thinking of settling in Florida. The inducements appear to be unusually great. — Any hints which your experience & knowledge make you capable of affording in this direction, I should be much obliged for.

Do you know anything about the "National Botanical Garden" to be located in Florida? Under whose supervision or direction the project is at present? &c. &c. —

I shall be glad to hear from you. — Direct to me till September 15th to Bayfield, Wisconsin; after that date my direction will be at my home in Detroit.

Do you know anything of the Perrine Grant of Lands, Biscayne Bay, Dade Co., Fla.? The climate appears perfection.

Very truly yours
Henry Gillman.

Dr. Geo. Engelmann,
St. Louis, Missouri.

The cones of the "Cork Pine", which

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I have already written you of, appear, on comparison with those of Pinus Strobus, to be much shorter. — It seems a good variety. H.G.

The cones of P. resinosa & Strobus become lateral by prolonged growth of branchlet. I find them so in August. While those of P. Banksiana, as I have already shown, are frequently terminal as well as lateral in the early part of the season (May).

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Rec Febr 15th
an — 16 80

Elizabeth Street West,
Detroit, Feb. 13. 1877.

My Dear Dr. Engelmann,

Yours of Dec. 21 was duly rec^{d}., & should have had earlier acknowledgment, but that I have been almost overwhelmed with care, anxiety, & business connected with my removal to Florida with my family. Various circumstances have interfered with my leaving before this time. I now hope to be able to get away the present month. I am much obliged for your information. In the mean time, finding nothing to do in the way of Government or other work here, these depressed times, I have resolved to go into the culture of the tropical or semi-tropical fruits, in Florida, such

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as Oranges, lemons, limes, bananas, guavas, almonds, olives, &c. - I trust I shall prove successful.

I am sorry my specimens of the oaks are not available to send you now, as I have sent all my Collections (Anthropology, Botany & Geology) to Princeton University, for a merely nominal sum. I was obliged to part with them, as I could not take them with me, &, indeed, I wanted the money - though so small a sum. The parting my herbarium, especially, was a great grief to me. It contained about 2000 species, mostly plants of the Lake Region, & very fully & largely represented by many thousands of specimens. Those illustrating "Variation" were very interesting, as I had been intending working up the material into a book on the subject - long a favorite one with me, but which must now be set aside, perhaps never to be resumed, or only as a brief occasional pastime. I am able, however to forward you specimens of a *Quercus*, from the South Shore of Lake Superior, which I am puzzled with. It was abundant where I collected it. Also what I take to be *Q. rubra, L.* from Fort Gratiot, Mich.— I enclose, herewith, the labels.— *Q. ambigua* I collected on the South Shore of Lake Superior—but have never met it elsewhere, to my knowledge. *Q. prinus* I have not collected or I believe met with, in any of its varieties, along the Lakes.

My *Rosa*, which had so long puzzled me, & which I found abundant on the upper Lakes (its very elongated fruit being a marked character), proves to be *R. acicularis*. I have long considered our roses required revision. Gray has sent my specimens to Crépin to Brussels. It is probable some names of the other Species will have to give way. I should like to procure a copy of Crépin's Monograph.

The Specimens of the Oaks I mail today in a separate package, ~~with~~ from this, & hope they will reach safely. —

I must now say good bye. Perhaps I may sometimes be able to gratify you with an occasional Specimen from "the land of flowers"; but I shall, in any case, remember always with pleasure the agreeable & valuable correspondence I have held with you in the past.

Very truly yours,
Henry Gillman.

Dr. Geo. Engelmann,
St. Louis, Missouri.

Will you please tell Dr. Riley that I have handed the insects collected by me on Lake Superior to Dr. Schwartz, who has promised me he would forward duplicates out of them to Dr. Riley, retaining the remainder for our Scientific Assn. —

Rec^d Febr 22
Ans — 23 P.C.

80 Elizabeth Street West,
Detroit, Feb. 20. 1877.

My Dear Dr. Engelmann,

Yours of the 16th inst. is before me, & I thank you deeply for your kind words of cheer. I am glad the oaks pleased you. — That which you pronounce ambigua of Michx., I was not quite positive about, & reserved it for future examination. My Specimens of Ambigua from Point Iroquois (already mentioned), I can only say ~~was~~ much more decidedly ambigua — the leaves being very broad — much more so than in the Specimens I sent you, from Chequamegon Point. — I feel sure that did you immediately write to Prof. A. Guyot, Princeton, New Jersey, who has secured my Collections for the College, he would be pleased to let you have the use of the oaks in my botanical Collection. It is probable you may find them of interest. Though it was my intention to do much more in that genus the coming season. I love them; & did not find them too difficult, or not more so than to give a keener relish to their study.

I have great hope of making a happy home & comfortable position in the South, for which I start about the last of February. You say "beyond everything, do not give up botany." — Perhaps for some reasons it might be well for me to give it up — or some might think so; but there is

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Missouri Botanical Garden

little probability that while I have breath I shall give up the Study of Nature — which is with me a worship — my *religion*. I was so born, & cannot help it if I would. My Mother has told me that when little more than two years old I would spend hours admiring the flowers in our beautiful gardens in the old Country, with my hands behind my back, as though I considered the beautiful blossoms too sacred to be touched. Before I was ten, I commenced writing about, & illustrating the wild flowers of our neighborhood. I still possess one of those books; & the drawings are really good, and carefully colored — though I had at that time no instruction in the art. — Such things are not easily rooted out.

You may be sure you shall hear from me when I get settled. It would please me to find time to make collections such as you mention. You suggest I might in this way make a little money. I would be obliged much by your suggesting to me some avenue through which this might be accomplished. — You could be of great use to me in this, no doubt. —

Hoping to hear once more from you before I leave, believe me, with many thanks,

Very truly Yours

Henry Gillman.

Dr. Geo. Engelmann.
St. Louis, Missouri —

Recd May 12
Ans May 13 Waldo, Florida,
May 7. 1877.

My Dear Dr. Engelmann,

I write you according to promise on settling in Florida. I have purchased a small plantation on the Shore of Santa Fè Lake, in Alachua County, about four miles from Waldo, a thriving little town on the Railroad. This place presents peculiar advantages for the culture of the semi-tropical fruits, the influence of the lake being an effectual protection from all danger from the frost, often felt even further South, as it was last Winter, which however was unusually severe. Santa Fè Lake is about 9 miles long by four miles wide, & the depth is 90 feet. It is a beautiful body of water, the banks rising to the height of fifty feet. The lake is supposed to occupy the highest land in Florida, the water, which is of subterranian origin, flowing Westward into the Gulf of Mexico & Eastward into the Atlantic. There are some fine orange groves on the shores, both wild & cultivated. I intend to plant the orange as largely as my means will allow, as that will be my main hope in the future. I should be glad of anything in the way of the semi-tropical plants, seeds, or trees, which would suggest themselves to you, & which could be spared from the Botanical Garden at St. Louis. From your intimacy with

Mr. Shaw, &c., I presume you could procure me many varieties with the object of introducing them into Florida. Anything in the line of the citrus family, Sapodilla, Japan Plum, Mango, Guava, &c., would be particularly desirable. I would also be glad of good varieties of the fig & grape, the Camellia Japonica, and the Eucalyptus Globulus. I mention these ~~rather~~ as being suggestive to you of what would be most desirable, rather than as expecting you would be able to fill any such list, even should the matter be within your control. I would be very thankful for any aid in this way which you are able to afford.

With respect to the dried plants, &c., of which you wrote me before leaving, I have to say that I have commenced Collecting, though under disadvantages, as most of my books, including my Botanies, are at the Station at Waldo, as I have not yet built; but I am staying for the present in a small cottage.

I have already done considerable planting, and hope my efforts shall be crowned with success. The location, as before expressed, is exceedingly desirable; not a leaf of an orange was touched here in the severe frost of last December which killed to the root so many orange trees further South in Florida.

I hope you will find time to write to me occasionally. I shall take special pleasure & pains in introducing varieties in fruit, flowers, &c., into Florida.

Very truly yours
Henry Gillman.

Dr. Geo Engelmann.

Ans June 19

small Eucal— geographically
Tobacco Culture

Waldo, Florida, June 12. 1877.

My Dear Sir;

Your good kind letter duly reached me, & was a great comfort to me in my comparative isolation. Many thanks for your advice, & for the seeds, &c., you promise, which shall be fully appreciated by me. Yes; the Eucalyptus globulus would do admirably here; & be useful in the low lands. Around the Lake Santa Fe are high hammock lands, interspersed with low, with high pine lands in the rear. The sloping shores are generally from 20 to 30 & even 50 or more feet high; & they present admirable sites for fruit culture. The hammocks present the mixed timber — everything but Pine; & often are a perfect jungle of vines & creepers, palmettoes, & undergrowth. The land is among the most valuable. Back in the Pine woods there is little or no undergrowth to impede the view for miles, & the glorious immensities of forest revealed at a glance have to be seen to be understood. Then there is the low Pine & the low hammock lands, as well as the regular swamp. All these have their own peculiar floras; & there is everyone of the abovenamed varieties of land in this neighborhood. In general, however, & especially out of the hammocks, the appearance of the vegetation has little of the tropical; & this is one of the greatest disappoint-

-ments to the new=Comer, who expects palms, ferns, &c., or something like at least semi=tropical luxuriance. To be sure, the yellow pines, which, for miles, are the most common tree, have, with their slender, tall, palm=like trunks, branching only at top, ~~h~~ something of a palmetto=like aspect. This tree gives the supply of lumber needed throughout Florida, as does the White pine in the North.- The common oaks here are the Scrub, water & live oaks; Conifers, yellow & pitch pines & cypress. We have a White Nymphaea here with large flower which if not a variety of odorata is perhaps a distinct species; but I have not seen the yellow Nymphaea with crenate undulate leaves to which you refer. We have several species of violet, peculiar, & four of pinguicula; ericaceae pretty full, & leguminosae more so. Yucca, Asclepias, Smilax, lonicera, clematis, &c., very interesting forms.-

Many thanks for your hints about the dried plants. I continue collecting, as my limited time affords opportunity, & do pretty well considering my engrossing duties.-

I hope you will remember to send me the promised seeds good time, & I thank You for them in advance. You would do me a great favor could You procure for me from some of Your fruit=dealers the seeds of damaged foreign oranges & lemons. Of the former — those most desired by me are the Blood oranges, the Maltese, & St. Michaels; though any others would not come amiss. I want thousands of them. The damaged fruit could probably be procured for little or nothing, & a smart boy or girl would pick out the seed easily, keeping the different varieties separate, so as to be able to name them. They need not be dried — are better moist; & can be sent me by mail. I shall gladly repay all expenses.— Very truly Yours

Henry Gillman

Date seeds are also desirable.—

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Rec July 11

Waldo, Florida,
July 5. 1877.

Dear Dr. Engelmann.

With respect to the Orange seeds, &c., which I requested you to procure for me, please, if you have taken no steps in regard to the matter, defer action till I further notify you.

In great haste, but
Very truly yours,
Henry Gillman.

We are having very hot & very dry weather: thermometer up to 97° & occasionally to 99°.—

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Recd Aug 27

Waldo, Florida,
Aug. 22. 1877.

My Dear Dr. Engelmann,

I wrote you some weeks ago, asking you to defer sending me some plants & seeds suited for introducing into Florida, & which I had requested in a previous letter. I now write to say that I shall be thankful to get any such whenever you feel able to send them. We are now entering on our Second Spring which is at the North Autumn. The warm weather of the last few weeks is growing much cooler, the trade winds and the rains (for this is the rainy season) greatly modifying the heat. – The seeds or roots, &c., of any of the sub-tropical fruits would be *most* *acceptable*. I have, considering my other duties, made a fair beginning on collecting the plants of this region, some of which are very beautiful, & the majority new to me. – I have been delayed & interfered with in the building of my house, &c., by various unforeseen circumstances; but I now hope to have my house finished sufficiently to get into it very soon. I shall then feel more at home, & more free to carry out my plans.

Hoping that you are well, & that I shall hear soon,

Yours very truly
Henry Gillman.

Dr. Geo. Engelmann
St. Louis, Missouri.

Rec Febr 6th
Ans — 7

Waldo, Florida, January 30. 1878.

My Dear Dr. Engelmann,

I enclose you specimens of a plant which I find growing on the sides of a deep, shady ditch, at Santa Fe Lake; it does not appear to be described in Chapman. Perhaps it is *Lycopodium* cernuum *(?) fontinaloides*, Spring., of which I have never seen a description.—

It is some time since I have heard from you. Since last I wrote, my convictions as to the exaggerations with respect to the desirability of Florida as a home for the poor man have only deepened. In fact the danger is that persons in moderate circumstances, ~~will~~ be induced to come here through false representations as to the ease of obtaining a maintenance, will expend their all while awaiting the advent of the prospective orange grove. This is indeed a wretchedly poor Country. There is nothing else definite about it except its poverty. Should I be so fortunate as to find a purchaser for my place here (at Santa

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Fe Lake) I shall return North.— I dare not risk experimenting further. I need scarcely say that this is all a great disappointment to me, as I came to Florida with many hopes. The terrible state of things North, too, is far from encouraging. But in the shape of things in which I find myself at present there seems nothing else to be done.— Should you know of any opening for me, I feel sure you would kindly let me know of it.—

I have collected here under many difficulties, but still have done tolerably well, considering that till quite lately I was unable to get at my botanics. I found *Blechnum serrulatum*, Michx. in low hummock land on the lake, *Polypodium Plumula*, Willd., *Spiranthes brevifolia*, Chapm., &c., &c.— The cold weather of the early part of Dec^{r}., when the thermometer dropped to freezing, killed back my pineapples, bananas, & other semi-tropical plants.—

Hoping to hear from you soon,

Very truly Yours

Henry Gillman.

Dr. Geo. Engelmann.

Rec March 5
ans soon by

155 Adams Avenue East,
Detroit, March 3. 1880.

My Dear Dr. Engelmann,

It is so long since I have heard of or from you that I have often felt anxious to know how you were. I do not remember which of us wrote last; but that, I am sure, need not matter. Ever since the death of my wife, which occurred in Florida, of the Congestive type of Malarial fever, after an illness of eleven days, Sept. 29. 1878, and the various changes consequent on my return to Detroit shortly afterward, I have been compelled to sadly neglect my correspondence; and even yet a number of letters have long lain unanswered, something most unusual with me. I fear some of my friends will not easily forgive me. But, I assure you, this state of things was not caused by any want of feeling on my part; and I know you will ascribe it to the right motive. —

My youngest daughter, who, at the time of her Mother's death had been for several weeks an extreme sufferer from malarial fever, has not yet entirely recovered its effects; and while I personally escaped the worst symptoms of this deadly agent, my health has been considerably im-

-paired. In our immediate neighborhood in Florida several fell victims to the scourge, mostly Northerners, and, in some instances after an illness of less than two days. Such facts as these are carefully kept out of the newspapers.

Of my Collection of Florida plants, I sent a set to Mr. Canby, who wished for them. Among them occurs *Schoenocaulon gracile* Gray, and a few other rare plants. But I have had as yet little time to overhaul them. There are some specimens of the oaks, which might prove interesting to you, & which I shall be happy to send you, as soon as I find a leisure moment, should you so desire.

Hoping to hear from you soon, and to learn that you are well,

Believe me,
Dear Dr. Engelmann,
Yours, Very Sincerely,
Henry Gillman.

Dr. George Engelmann,
St. Louis,
Missouri.

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Ansd April 25

Public Library,

Detroit, April 22. 1881.

My Dear Dr. Engelmann,

I hasten to acknowledge the receipt of your letter of the 17th inst., and to thank you for the copy of your very Elegant Revision of Pinus, which has since reached me, and which I find very interesting. I am much obliged for your remembering me in this.

In your lamentation over the Roses, asters & oaks, I think you might include the Solidagos. Of the last, I found a species on Lake Michigan (growing in Sand on East shore, Michigan) which

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no one was able to place, & which puzzled Gray & Boott to say positively where it belonged.

I have since found out all about the fish I wrote you of. I see you are positive about not knowing everything. That is the only way.

I sent you a copy of Report containing my Report on the Public Library. You will see what little time I have for study or any leisure, and the change to a Commission, though most desirable, as it lifts us out of the pool of politics, throws on me much additional work.

Very truly yours,
Henry Gillman.

Dr. Geo. Engelmann

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Rec Febr 27
ans same day

Public Library,
Detroit, Feb. 23. 1882.

My Dear Dr. Engelmann,

It seems a long time since I have heard from you; though I think I wrote last. But I understand you have been in Europe, &c.

If not too great trouble, will you kindly explain to me how the apparent periodical opening & closing of the flowers of Lemna is produced? How does so simple a flower as that of Lemna present a phenomenon similar to what is called the opening and closing of ordinary flowers with a perianth, &c.? In other words – What is the process?

Have you ever observed the length of time between the maturing of the pistil and the first and second stamens, and does the stamen farthest from the base of the frond constantly precede the other, in case both are developed?

I shall be greatly obliged for any information on the above points. –

I had a letter from Dr. Gray, from Kew, England, shortly before his leaving for the United States; but have not heard from him since his return. –

With kindest regards,
Very truly Yours,

Henry Gillman.

Dr. George Engelmann,
St. Louis,
Missouri.

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Rec April 15

Public Library,
Detroit, April 13. 1882.

My Dear Dr. Engelmann,

Your letter in reply to mine referring to Lemna, duly reached me; and now I have to thank you for your admirable monograph on the Isoëtes, written with your usual care & precision, & the result of so much thorough investigation & patient labor. I am very greatly obliged to you for your remembering me in this; and I shall carefully preserve this valuable treatise with the others which, from time to time, you have so kindly sent me. We owe you much for all you

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have done for Botany, and especially for the generous communication of your knowledge & the results of your research.

With respect to the *Lemna*, last Summer, I regret to say that owing to peculiar circumstances & the pressure of important duties, my observations were unsatisfactory. The absence of the flowers in the morning, their gradual appearance during the day, and their disappearance at night, are facts I could hardly be ~~I~~ mistaken in. It is probable I shall be able to procure some of the flowering *Lemna* next Summer, when I shall make more thorough study of the neglected points, and particularly of those under enquiry. Should I prove so fortunate as to find them,

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I shall send you some of the living specimens. – I have little doubt the flowering has taken place oftener than I am aware of; but owing to my absence at the time of flowering, it has not been observed. Belle Isle, the island in the Detroit River, opposite the upper or East end of our City, & which contains about 700 acres, having been purchased by the City for a park, certain improvements will soon be entered on which I fear will destroy my Lemna pond. But I hope this will not be till after next Summer. It was in the Detroit River, opposite, or along the shore of this island, that I found so frequently the Isoëtes. You have got the name Belle Isle incorrect in your monograph — making it in one syllable, &c. —

Yours Very Truly,
Henry Gillman.

Dr. Geo. Engelmann,
St. Louis, Missouri

Rec Nov 27
An — 30

Public Library,
Detroit, 25 Nov., 1882.

Dear Dr. Engelmann,

I wish to call your attention to an article in the "Popular Science Monthly" for December, on the "Annual Growth of Trees" by Dr. A. L. Child, in which he controverts the generally received opinion that "the concentric rings of a tree are a reliable record of its age in years." – He refers to Désiré Charnay's statement, in his "Ruins of Central America" to a similar effect. Dr. C says he counted from 35 to 40 concentric rings in trees of 12 years' growth.

As you have given so much

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attention to the Subject, or at least to subjects related thereto, I am anxious to know whether you can throw any light on the matter. As for myself, I have to confess my ignorance of *proofs* in the case. You will, of course, at once see the importance of placing the question beyond dispute. This might be easily done, I suppose, by having recourse to a nursery, in which the ages of the trees can be established without doubt. I should be glad to hear from you on the subject. I am slow to give up an opinion hitherto ~~up~~ so universally received, without sufficient demonstration of its being fallacious.

I am sorry to say I found no blossoming Lemnae this year, though I carefully searched various localities, & especially the original station at Belle Isle. The plants had every indication of not having produced flowers this season –

Very truly yours,
Henry Gillman.

Dr. George Engelmann,
St. Louis,
Missouri.

I have recently been shown an interesting example ~~of~~ of a man's cranium in which the cervical vertebra is firmly attached to the foramen magnum. Have you ever known an instance of this? — H. G.

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